

CLAIMS

We claim:

1. A method for cooling materials in structures having an air conditioning system, the method comprising: providing an enclosure constructed and arranged to house the object to be cooled in an air bath; providing a refrigerant to air heat exchanger in the air conditioning system capable of delivering cooled air to the enclosure; and recirculating
5 cooled air through the heat exchanger and the air bath at a rate sufficient to cool the object to the desired degree.
2. A method of cooling materials in structures having an air conditioning system, the method comprising: providing a container constructed and arranged to house the material to be cooled in an air bath, the container having an air supply port and a return port; providing a docking structure to which the container is caused to abut, the docking
5 structure being provided with an air supply port and a return port adapted to register with the respective supply and return ports of the container; and means providing means in the docking structure for generating the cooled air necessary for cooling the material in the container.
3. The method of claim 2 wherein the; last mentioned means utilizes the refrigerant from the air conditioning system to generate the cooled air.
- 4 The method of claim 2 wherein the last mentioned step includes providing a self
4 contained refrigerant compressor, a condenser, and evaporator which supply the cooled air discharged by the docking structure.
5. A method of cooling materials in a remote location, the method comprising:

providing a primary heat exchanger having a liquid coolant on one side and a primary refrigerant on the other side; providing a docking station remote from the primary heat exchanger, the docking station being adapted to receive a container for objects to be cooled; providing a secondary refrigeration system having a liquid coolant supply conduit and a liquid return conduit communicating the docking station with the primary heat exchanger; and providing a second heat exchanger which receives liquid coolant from the supply conduit and conducts it to the return conduit and which cools the container.

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6. Apparatus for cooling portable devices, the apparatus comprising: a docking platform; docking means for securing the portable device to the docking platform, a refrigeration tower; means for securing the refrigeration tower to the docking platform in a position adjacent the portable device when it is docked to the docking platform; and the refrigeration tower being constructed and arranged to discharge cooled air into the portable device when the portable device is adjacent the refrigeration tower.

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7. The apparatus of claim 6 including a second portable device; means for docking the second portable device to the docking platform adjacent the first portable device; the first and second portable devices being constructed and arranged to pass air from the first portable device to the second portable device and recirculate the air back to the refrigeration tower.

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8. Apparatus for cooling materials to be transported to remote locations comprising: a portable container for receiving materials to be cooled in an air bath, the container having an air inlet port and an air outlet port communicating with the air bath; a heat exchanger for; cooling an air supply; and means for circulating air through the heat exchanger and through the inlet port to the air bath and recirculating air from the outlet port back to the heat exchanger.

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9. The apparatus of claim 8 wherein the heat exchanger receives refrigerant from the
10 air conditioning system of a transportation vehicle.

10. Apparatus for cooling materials in a remote location comprising; a primary heat
exchanger having a liquid coolant on one side and a primary refrigerant on the other side;
a docking station remotely positioned from the primary heat exchanger, the docking
5 station being constructed and arranged to receive a container for objects to be cooled; a
secondary refrigeration system having a liquid coolant supply conduit and a liquid
coolant return conduit communicating the docking station with the primary heat
exchanger; and a second heat exchanger which receives liquid coolant from the supply
conduit and conducts it to the return conduit to cool the container.

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11. The apparatus of claim 10 wherein the second heat exchanger is located in the
container for the materials to be cooled.

12. The apparatus of claim 10 including a collapsible container with the second heat
exchanger being a flexible tubing secured to the walls of the collapsible container.

13. Apparatus for transporting cooled materials to remote locations, comprising: an
enclosure constructed and arranged to house the materials in an air bath, the enclosure
having an air supply port and an air return port; a docking structure adapted to be abutted
by the container, the docking structure having a supply port and a air return port adapted
5 to register with the respective supply and return ports of the enclosure; and means in the
docking structure for causing cooled air to be delivered to its supply port when the
enclosure is docked to the docking structure

14. The apparatus of claim 13 where the enclosure is disposed within a conditioned
compartment of a home refrigerator and provides a means of temperature stabilization in

relation to the surrounding compartment ambient temperature excursions.

15. A refrigeration system for cooling materials in remote spaced apart locations the system comprising; a primary refrigeration circuit having a compressor and evaporator; a portable chest having an air bath to receive material to be cooled; a docking station for the portable chest constructed and arranged to discharge cooled air into the air bath of the portable chest when the chest is coupled to the docking station, and means for cooling the air discharged by the docking station utilizing the cooling produced by the primary refrigeration circuit.

16. The refrigeration system of claim 15 and having a secondary liquid coolant recirculating circuit cooled by the primary refrigeration circuit and to which the means of claim 14 receives its cooling through the intermediary of the secondary liquid coolant circuit.

17. The refrigeration system of claim 15 having a tube within a tube heat exchanger cooled by the primary refrigeration system and cooling the fluid of the secondary refrigeration system and the means receiving its cooling effect by recirculating air over the tube within a tube heat exchanger.

18. The refrigeration system of claim 15 including control means which activates the docking station when the portable chest is docked with the docking station and which deactivates the docking station when the portable chest is removed from the docking station.

19. Apparatus for cooling materials in spaced apart remote locations comprising: a docking structure at the remote locations; a heat exchanger at each docking station; primary refrigeration means having a cooling capacity to serve the heat exchangers; a refrigerant to cooling liquid primary heat exchanger with the refrigerant being supplied

- 5 by the refrigeration means; and means recirculating liquid coolant from the primary heat exchanger to the heat exchangers at the docking station.

20. The apparatus of claim 19 wherein the apparatus also includes a refrigerant to air heat exchanger; a major docking station for a storage container; and means circulating air from the last mentioned heat exchanger to the major docking station.

21. The apparatus of claim 19 including a major docking station for a storage compartment; and means circulating air over the primary heat exchanger and delivering it to the major docking station.